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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,647	11/02/2005	Yasushi Mizutani	52433/774	2264
26646	7590	01/23/2008		
KENYON & KENYON LLP ONE BROADWAY NEW YORK, NY 10004			EXAMINER YEE, DEBORAH	
			ART UNIT	PAPER NUMBER
			1793	
			MAIL DATE	DELIVERY MODE
			01/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/509,647	MIZUTANI ET AL.	
	Examiner	Art Unit	
	Deborah Yee	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3-29-05;6-5-06</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,299,710 (hereinafter Itakura et al.) or Japanese patent 07-70638 (hereinafter JP'638) cited by Applicant in IDS dated June 5, 2006.

3. Each reference teaches bainitic steel alloys that meet the composition, and when calculated, have a $PCM \leq 0.2$. See Itakura et al., alloy R in Table 1 of columns 7-8; and JP'638, alloys D and E in table 2 on page 4.

4. Claims 1 to 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese patent 09209077 (hereinafter JP'077) cited by Applicant in IDS dated March 29, 2005.

5. JP'077 discloses bainitic steel alloys 1 to 15 in table 1-1 on page 5 that meet the claimed composition, and when calculated, have a $PCM \leq 0.2$. Also examples appear to meet the stress drop ratio, P, equation. Note for instance, steel 2 in table 2 on page 6 has a yield stress (YS) at room temperature=322 MPA and YS at 700C = 181 MPA; hence the stress drop ratio= 0.562, and when calculated, $-0.0029 \times (700C) + 2.48 = 0.45$ such that $0.562 > 0.45$.

6. Even though JP'077 does not teach the P equation as recited by the claims, the high temperature yield stress attributed to the equation is taught. Moreover, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, see *In re Cooper and Foley*, 57 USPQ 117.

7. Also similar to the present invention, the computer-generated English translation of JP'077 in paragraphs [0016]-[0021] teach Mo, Nb and Ti carbonitrides in wt% ranges that would suggest Applicant's claimed molar range.

8. Even though a structure that reversely transforms into austenite during high temperature heating corresponding to a fire higher than 800C or a prior art austenitic grain size of not more than 120 microns as recited by one or more of the claims is not taught by prior art, such properties would be expected since composition and other properties are met, and in absence of proof to the contrary.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1 to 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,299,710 (hereinafter Itakura et al.).

11. Itakura et al. in columns 3-6 discloses a steel alloy with constituents whose wt% ranges overlap those recited by the claims; such overlap establishes a prima facie case of obviousness since it would be obvious for one skilled in the art to select the claimed

alloy wt% ranges over the broader disclosure of the prior art because the prior art teaches the same utility (structural components for buildings) and similar properties of high tensile strength and microstructure comprising at least 90 vol.% bainite with the remainder being ferrite. See MPEP 2144.05.

12. Also the steel of Itakura et al. is processed in essentially the same manner as recited by method claims comprising the steps of heating steel to Ac3 to 1350C (overlaps 1100 to 1250C), hot rolling with a finishing temperature higher than 800C (overlaps hot rolling temperature of not lower than 850C), cooling at a rate of 0.1 to 80C/sec (encompasses claimed cooling rate of not lower than 0.3 K/sec.) to obtain bainitic or bainitic-ferritic microstructure. In addition, prior art teaches heating steel at 500-800C to precipitate carbonitrides, similar to the disclosure on page 12 of Applicant's specification, last paragraph.

13. In addition, specific prior art examples in table 1 of columns 7-8 meet or closely meet the claimed composition and when calculated, satisfy $PCM \leq 0.2$ recited by one or more the dependent claims.

14. Even though a structure that reversely transforms into austenite during high temperature heating corresponding to a fire higher than 800C or a prior art austenitic grain size of not more than 120 microns or a stress drop, P, equation as recited by one or more of the claims is not taught by prior art, such properties would be expected since composition and process of making are closely are met, and in absence of proof to the contrary.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

16. Claims 2 to 5 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

17. Claims 2 to 5 and 9 do not clearly define the P equation since the unit of measurement for the yield stress is not disclosed. It is recommended to incorporate -- the limitation ---wherein yield stress is in MPA---

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on monday-friday 6:00 am-2:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)? If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah Yee/
Primary Examiner
Art Unit 1793

/DY/